Newsletter from Conference/Workshop on Building in Northern Communities

Pam: 69: (*41N) CWBNC

POLAR
PAM
5114
POLARPAM

BOREAL INSTITUTE
LIBRARY

TREVOR LLOYD PRESENTS INTERNATIONAL PICTURE

The Conference/Workshop on Building in Northern Communities opened this morning with a keynote speech by Trevor Lloyd of McGill University.

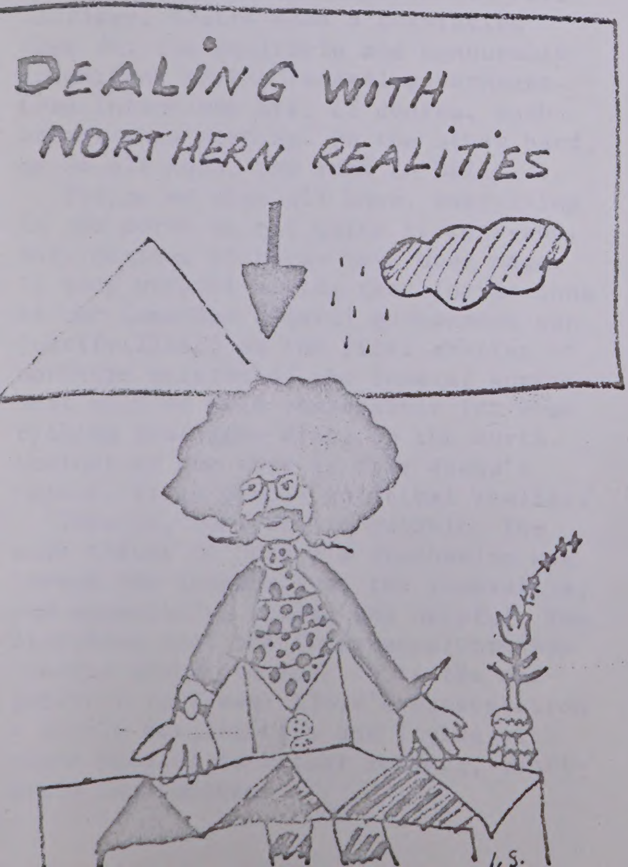
In a colourful presentation which featured an attractive collection of slides, Dr. Lloyd pointed to the experience of other countries in development of northern towns. He made particular reference to the experience of the Eskimo population and the Danish government in Greenland, stressing the adaptability of native populations to the learning and performance demands of highly sophisticated technology.

Turning to the situation in northern Canada, Dr. Lloyd stated that in his opinion, we are "about 30-40 years late" in comparison to Greenland. He emphasized, however, that this should not be interpreted as a reason for rushing into northern development here. In fact, he suggested that we may profit by the mistakes as well as the successes of other nations.

"We must think of northern Canada as being a preserve: nobody should be allowed to do anything in the north without clearance." Dr. Lloyd said that in his opinion, development in the north should be preceded by a full 20 years of scientific research.

Bearing in mind that we must be prepared to accept change in the social as well as the physical climate, he predicted that northern communities of the future will be built for small, sophisticated and technologically oriented societies. There will be a limited number of urban "bases" connected to smaller satellite communities and these will be linked by elaborate transportation and communication facilities.

While initially the quality of urban development will be affected by the presence of "urban nomads", presumably from southern Canada, the future in the north must surely witness the increased participation and ultimate domination by native peoples, - technologically, socially, economically and politically. Dr. Lloyd stressed that a new form of government must be found to serve the realities of living in the far north.



FOR OPENERS:

The Conference/Workshop on Building in Northern Communities opened this morning with a small number of participants who made up in interest and attentiveness what they lacked in numbers. In his opening remarks Len Warshaw of the Université de Montréal pointed to the wide range of specializations called upon to create input into the problems associated with building in the north. He said that thepurpose of the Conference is the stimulation of exchanges of knowledge and experience in an atmosphere in which all those participating will learn as much as possible about this multi-disciplinary area of investigation and achievement.

38265

JAN 10 1980

DISCUSSION AND REPERCUSSION

If the first day of the Conference/Workshop exhibited a polite and restrained atmosphere in its plenary sessions, the open discussion which followed the day's formal meetings made it quite clear that the participants at the conference are a group of individuals who have strong feelings about the future of the north.

Predictably, there was a general feeling of sympathy for the humanistic and sane position put forth in the morning session by Trevor Lloyd. At the same time, and almost equally predictably, the position taken by Karl Stairs of the Department of Indian and Northern Affairs was there to be questioned. Government departments are as we all know, government departments - it is the citizen's duty to find them suspect.

It must be recorded that Stairs' dedication and personal conviction are no longer (if they ever were), open to question. With the support of his colleague in the Department, Peter Eldridge, Stairs made a convincing case for the equitable and honourable intentions of the federal government. Good intentions are, of course, much better than nothing. On the other hand, as we all know, the road to hell.....

For, as we also all know, everything in the north is not quite tickety-boo. Very serious mistakes have been made. It goes without saying that for as long as the Canadian federal government can justify itself as the final arbiter of northern existence, the federal government will be held responsible for everything that goes wrong in the north. Whether or not this is fair doesn't matter. It is simply political reality.

This is, however, to quibble. The main thrust of Monday's discussion was toward the imaginative, the innovative, and especially, toward the helpful. The direction that the Conference/Workshop clearly wishes to move to is the one implicit in Trevor Lloyd's presentation - people dealing with and living with other people: in mutual respect, confidence and concern.

DELEGATES TURN THUMBS DOWN ON JAMES BAY

Boyce Richardson's controversial film, Job's Garden, proved too much for some conference participants to take.

The colour documentary, produced for the Indians of James Bay, was to have been screened Monday night in its entirety; but after one reel, the NFB projectionist was instructed to show something else.

The two dizen delegates and their guests sat through about 30 minutes of the movie, which showed Indians of the area as they live today, - trapping, fishing, caring for their families, seeking to live off the land rather than accept the white man's culture.

The proposed James Bay hydro-electric project would flood an area two-thirds the size of France, innundating the "garden" of the native peoples by damming seven great rivers. The scheme has been widely criticized by ecologists and conservation groups throughout North America.

Your reviewer would have liked to have seen the second reel.

OVERHEARD IN THE RECEPTION AREA

"You'll notice you didn't hear much about James Bay."

"No, and I'll bet you won't, either."

THIS RAG IS DISTRIBUTED THROUGH THE FACILITIES, BUT NOT NECESSARILY WITH THE BLESSING OF THE DEAR OLD ARCTIC INSTITUTE OF NORTH AMERICA. GOD BLESS.

PERMAFROST :

A WORKING DEFINITION

Construction in Canada's developing Northern regions can succeed only if tested procedures for building in perennially frozen ground are followed. Roger Brown, senior research officer with the NRC's Northern Research Group's Geotechnical Section, told conference delegates today such information should be provided builders at the regional level of government and be readily available at all construction sites.

Dr. Brown joined the Division of Building Research in 1953, three years after the NRC began its first detailed study of permafrost. He said Canada has benefited much from work done on the subject by Russian scientists and U.S. Army's Cold Regions Research and Engineering Laboratory (CRREL) in Alaska.

In a talk illustrated with photos of physical features and graphs showing continuous and discontinuous permafrost areas, he discussed those factors which influence the incidence and degree of frozen ground.

These include relief, vegetation, fire, hydrology, snow cover, glacier ice and the type of soil and rock. In a permafrost situation, a top layer of ground remains active - that is, it freezes and thaws under normal conditions. The thickness of this active layer varies from hundreds of feet in discontinuous areas to a depth of only five inches below the surface in the extreme north (e.g. Ellesmere Is.).

Dr. Brown explained that at a certain depth the temperature of the ground, lying beyond the effect of surface heat or cold, never changes. This is the zone of Zero Annual Amplitude.

He also defined and showed examples of surface features associated with permafrost like Pingos - volcano-shaped hills pushed up to a hundred feet in elevation by the pressure of subterranean water freezing. These remarkable formations produce a starting effect viewed from the air, particularly in the later stages of decay when the middle core thaws out to leave great craters, frequently in the middle of a lake-bed.

He estimated the Pingos were three or four thousand years in formation. Also a product of the push-pull of freeze and thaw are Palsas, rock pushed to the surface in peat (muskeg) areas, and huge ice-wedge polygons, measuring 100 feet across.

Dr. Brown said the record depth recorded for permafrost is 5,000 ft. at Yakutsk in the northeastern USSR but it has been found as far south as the Pennsylvania Turnpike. These conditions present particular difficulties for road-builders who must contend with severe buckling and swelling. This is a marked characteristic in discontinuous areas where Taleks or unfrozen zones between the active and permafrost layers are an unpredictable nuisance.

THE HUMAN FACTOR

After listening to Karl Stairs, no one could fail to understand that with relation to northern affairs, the federal government often seems to be saying "God knows,we've tried."

In fact, it is probably the case that the federal government has tried. Keeping pace with northern development would be difficult enough; keeping pace with changing social attitudes toward northern development, whether in the north or the south, is well nigh impossible. Keeping pace with all these things through the medium of federal government legislation, is clearly beyond the pale of human capability.

The real value of Mr. Stairs' presentation lies in its vested closeness to the situation. Just because that closeness is vested, we can be assured that a very respectable degree of realism and an honest respect for practical reality are in the ascendancy.

We need people like Karl Stairs.

WE SHOULD HAND OUT A WELCOME SIGN FOR BRAINS*

The Conference/Workshop on Building in Northern Communities

IF THIS IS TUESDAY, IT MUST BE PERMAFROST

As Trevor Lloyd was heard to remark yesterday, "This conference is a marvellous idea."

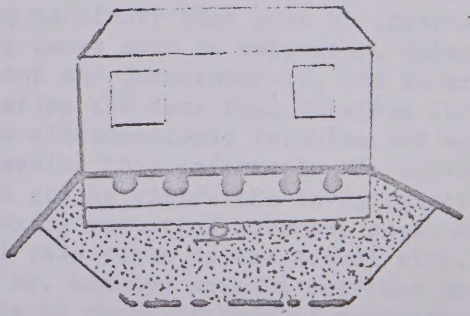
One of its marvels was unwrapped this morning in the form of Hank Johnston's paper, Construction of Foundations and Engineering Facilities on Frozen Ground. While the paper itself was quite detailed and specific, the overall impression was one of the scope of man's investigations in a difficult climate, the persistence of his will to know and master an extreme and unpredictable environment, and, finally, the irony of his continued presence in a land which will not support concentrated human life.

For example, Mr. Johnston outlined the way in which a system of steel ducts may be positioned in a gravel pad foundation in order to aerate the foundation itself and compensate for the increased surface temperature imposed by a structure, thereby maintaining a thermal constant in permafrost and the continued existence of the structure. During the question period, it was pointed out that such a system of ducts must be kept free of snow: that is, certain custodial complications are in the ascendancy. One of the participants suggested that if the size of the ducts is enlarged so that it will accomodate a human body, a man can actually crawl into the duct and clean it out. So it is that years of research and experiment are resolved by fastidious housekeeping.

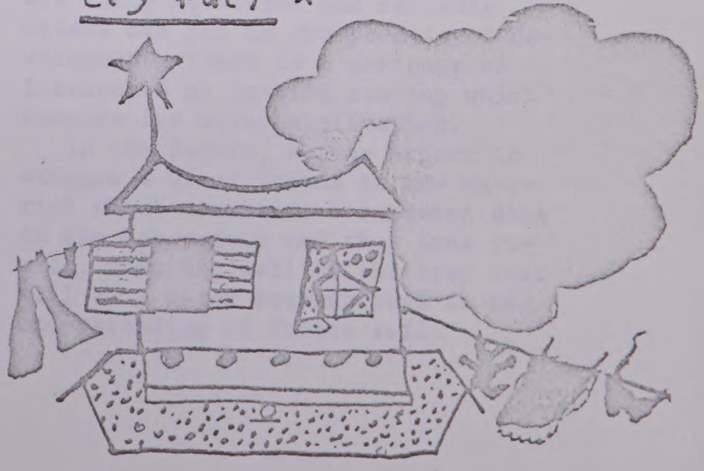
We are not being facetious. The number and complexity of the variables which cannot be ignored if building in permafrost is to be successful, is formidable. Surface temperature, climatic variation, mean annual temperature, composition and homogeneity of soil, moisture content and distribution, snow cover, topography, drainage, the size and shape of the projected structure and its intended thermal qualities and effect, the geothermal grading, organic cover, the size, shape and depth of excavation are all factors which must be seriously and a accurately taken into account. Further, they must be taken into account on the actual site, laboratory testing not being sufficiently reliable. And after all that, any number of problems may crop up. It is difficult to predict the temperature at which ice in soil will or will not melt. Frozen ground conducts heat at a greater rate than unfrozen ground. The movement of a vehicle over permafrost may create unforeseen activity in permafrost. All this, we understand, is to merely scratch the surface.

To know that in this maze of complexity, there exist persons like Johnston, who can patiently, coherently explain the intricacies of this range of problems, is, in this troubled world, a source of reassurance. Building on permafrost is hard work. Guys like Hank Johnston make it possible. With admiration and respect, one feels forced to comment, "What a piece of work is man!" Or has somebody already said that?

"END FICTION,



try fact"*



*EZRA POUND

CRREL CHIEF REPORTS ON DEEP FOUNDATIONS IN PERMAFROST

It is a mistake to go into perma- st foundation construction with only e building system. Frederick Crory of he U.S. Army Corps of Engineers told de- egates Tuesday that a series of systems is necessary to acconodate the varied ter- ain and other condition in the north.

Head of the Foundations and aterials Research Branch, Cold Regions esearch and Engineering Lab (CRREL), e provided a most informative session howing several methods of foundation onstruction in which the advantages of ermafrost are utilized. Dr. Crory lso discussed testing and monitoring ethods.

One example of foundations used gravel basin deposited under a uilding site. Water is then intro- uced. It freezes to provide a highly table layer in which the footing rests.

The elevation of water in the asin is kept constant by supply from urface wells. It freezes before the nderlying silt providing a strong oundation.

He also discussed the special engin- ering problems of bridge foundation uilding in Alaska and the use of cast-in- lace concrete piles (suitable only in arm permafrost).

Dr. Crory surveyed foundation reparation and said the Alaskans have bandoned steam drilling in favor of uguring. He mentioned the William ugur which cuts a four-foot diameter hole a depth of 75feet at a rate of six nches a minute.

This hole, two inches bigger an the pipe is then back-filled th silt or sand and controlled ounts of water of water introduced freeze and hold the pile in place.

Another method, using timber les, involves speeding the freezing ocess by attaching copper tubing the piles. Freon is circulated ter the timbers are in place and ground goes to about 20 degrees withing a few hours - providing ighly stable medium.

In closing, Dr. Crory mentioned upcoming International Conference Permafrost to be held in Yakutsk this summer. This prestigious conclave will result in a "new testament" published after the Purdue U. conference in 1973. The North American portion of the projected two-volume set will be available from the National Research Councils in Ottawa and Washington.

The Russian volume should be available after translation in July or Aug.

INNOVATION IN-SITU WITH LADANYI

Marshalling an impressive array of mathematical formulae, Branko Ladanyi of the Ecole Polytechnique today gave Conference participants a comprehensive rundown of a wide variety of in-situ testing methods that may be used to establish the mechanical properties of frozen soils.

While laboratory testing has provided valuable information in this area, it is awkward and expensive to come by. In addition, lab tests can deal with very small samples only, and therefore they produce information about that sample rather than the whole system of which they are a part.

Using fairly simple, mobile testing machinery that goes by interesting names such as volumeter, dilatometer and penetrometers, and interpreting the data thus obtained through the aforementioned formulae,and expressing this information in curves and graphs yields the investigator an amazing amount of accurate data. And all this right on the actual site.

Mr. Ladanyi pointed out that while many of these methods of measurement are fully developed and reliable, others are yet in the process of development. There is a shortage of literature on in-situ testing which hampers its wider application.

In the future, we may expect to witness a broad influx of new material which synthesizes research done in the laboratory and that done in-situ. This may well be the step that will be a major breakthrough in the understanding of frozen soil.

FIRST FOR THE HIGH ARCTIC

Aided by one of the best collections of slides seen so far in the Conference, Mr. Romer of Foundation Co. of Canada this afternoon described the construction problems associated with the Asbestos Hill Development in northern Quebec: the first commercial development in Arctic Canada.

The "Hill" is a 20-million ton mountain of asbestos ore, from which 1.6 million tons of processed product will be obtained for shipment under the terms of long-range contracts.

The engineering and logistic problems associated with the project have been staggering. The mill and mine are located at 1400 feet above sea level, 40 miles of tundra away from the shipping point at Deception Bay. The shipping season (if one can call it that), is about 3 months long, - if you don't count storms, blizzards and icebergs, - the winds are recorded at 100 mph.; after which the recorders stop working and guesswork begins.

Total construction-to-operating time was about two years: from the summer of '70 to the summer of '72. This boils down to a very remarkable engineering achievement in the actual environment.

A few problems, - some of them still not solved, - were encountered along the way, including a landslide which removed an oil tank, roads that are repeatedly snowed under despite a general absence of snow, and, the "usual" problems of summer thaws in roadbeds, washouts, and so on. After looking at the slides it is no surprise that experienced truck drivers persist in "losing" the road, even in good conditions. To this reporter everything looked white.

It was more than obvious that the Conference participants were full of questions about this interesting project, but time ran out on Mr. Romer. The discussion will be continued at a lunch session on Wednesday and may well persist into that evening's "Nite Flights."

EXTRA SPECIAL FILM PRESENTATION

Participants are advised that the program for tomorrow (Wednesday) evening's shedule of technical films and "Nite Flights" has been somewhat altered.

Just The Beginning, a half-hour film produced by Federal Commerce and Navigation, will be screened at 7:30 p.m. in the Main Auditorium of the Université de Montréal. The film examines transportation and logistic problems encountered in the very high arctic. It will be followed by one or two short technical films.

"Nite Flights" will begin at 8:30 in the conference rooms given in the program. Those wishing to make presentations are invited to post relevant information on the bulletin board in the reception area.

FIELD TRIP CANCELLED

To the regret of a number of participants, the proposed field trip to Churchill Falls has been cancelled.

For most people, the extra two days required to make this excursion are beyond the realm of possibility. It is perhaps surprising that the cost factor has not influenced the decision of very many, despite the fact that $200. is unquestionably a considerable expense. Frederick Crory, who has already been to Churchill Falls was asked whether he thought the trip worth the money.

He replied that it was, if anything, a bargain; and that he himself would enjoy another opportunity to visit the gargantuan power project.

Conference participants who would like to be notified of plans to make this field trip at some other time should notify the staff at the reception desk.

THIS CLASSIC EXAMPLE OF RESPONSIBLE JOURNALISM IS MADE AVAILABLE THROUGH THE FACILITIES OF THE ARCTIC INSTITUTE. READERS ARE ABSOLUTELY REQUIRED TO SUBMIT INFORMATION TO THE NORTHERN RESEARCH SURVEY.

Thursday's weather:
rainy and yellow.

WHY BUILDINGS FAIL, OR, WHERE DID I PUT THAT IGLOO?

Building in Northern Communities

[illegible] LIKE IT IS

George Jacobsen opened the Conference session Wednesday morning and came down heavily on the side of the practical, the reasonable and the efficient.

In a paper that stressed the importance of using forethought instead of hindsight, Jacobsen said that the incidence of failure in northern engineering situations was appreciably higher than need be, due to the reluctance of builders to perform the kind of painstaking logistics planning required by the realities of the north.

The obvious fact that construction in the north is different from what it is elsewhere must become a prevailing habit of mind. At the same time, there is a wealth of material available to northern planners from both public and private agencies which is all too infrequently consulted. The experience of the Scandanavians and the Russians is available in translation in this country but is not being put to its fullest use.

Outdoor work can be done in a number of shifts through the summer thereby taking advantage of the long period of daylight. Plans for shipping materials must take into account the conditions at the receiving end and the method of shipping selected accordingly. On site surveys are absolutely and invariably essential.

Sewage problems in northern communities provide an excellent case in point. Jacobsen is of the opinion that three basic systems are needed to meet the needs of different situations. In single, self-contained buildings, a self-contained recirculating system is most efficient. A small community, say 2000 persons, may be served by a simple utilidor system such as the one which has been successfully tested in Resolute. A complete underground system for settlements of over 10,000 should be a R&D priority. No such system presently exists.

REVEALED AT THE WEDNESDAY P.M. WORKSHOP

The Pentagon's attempts to build up an all-volunteer army have resulted in larger living quarters for G.I.'s stationed in Alaska. Previously there were complaints from the men that sleeping accomodations were too small and lacked sufficient storage space for heavy clothing and other gear. Also targeted by many complaints were unheated floors adjacent to showers.

Many delegates expressed a low opinion of government ability to respond when improved methods are developed. Unless an apparent large saving is involved, both American and Canadian authorities are slow to bankroll design modifications or departures from accepted, tried and true (20 years of research) building procedures. This despite the best engineering arguments on the basis of better health, safety, efficiency and other factors. An example of the savings possible with a more flexible position comes to us from Manitoba. It was shown that the provincial government could save $250,000. over 10 years by insulating the floors of its northern buildings at an average unit cost of $85. Another boon for the taxpayer!

The failure rate on large roofs in Alaska is 71%. It is hoped that such innovations as the membrane roof design demonstrated on Tuesday by Mr. Aamot will bring this figure down as it keeps ceilings up.

There was some discussion of the sociological factors involved in bringing services to native peoples and other populations in the north. Is it accurate to say that Eskimos are forced to leave their traditional home-areas when health and welfare services are only provided elsewhere?

Tension between Eskimo groups of different origins was mentioned in connection with Port Harrison and Resolute Bay, although it was suggested that such barriers (described as "native paternalism") are beginning to break down.

THE ARCTIC INSTITUTE OF NORTH AMERICA
HOPES THAT YOU ARE THINKING A LOT,
LEARNING A FEW THINGS, AND, OF COURSE,
HAVING A GOOD TIME. WE ARE.

CHURCHILL FALLS: THE NEW PROTOTYPE OF THE COMPANY TOWN

Hollywood-style vanities, three-car garages, a swimming-pool, even a curling rink? Does this sound like roughing it in the north woods?

But it is all a part of Churchill Falls, 700 mi. N/E of Mtl. Now about those illuminated vanities! (you know the kind; the mirror is surrounded by small incandescent bulbs or colour-muted fluorescents). Well, this is apparently what many of the operator families at Churchill Falls came up with as suggested building improvement.

At present the vanities are still an individual consumer choice - an optional feature at the company store in the town built. So are electric humidifiers to replace water vapor - a scarce commodity when the central heating must withstand chill factors of minus 110 F. in the dead of winter.

The curling rink, gymnasium, bowling alley, skeet shooting range, playground, and hotel were all provided by the Churchill Falls Corp. Ltd. in order to furnish exercise and diversion for townsfolk - expected to number about 1200 at peak development, only one-third of which are actual work force.

A large swimming pool, located in the core of social activity, the town center, is used year round with a supervised aquatics program. The light, warmth, tropical humidity of the brightly finished swimming facility provides a sensorial oasis - antidote for the bone-chilling darkness of the sub-arctic.

Not that the 400 workers and their families are unused to life in a cold climate. Many of them hail from the Labrador shore, where hunting and fishing are traditional recreations. Those three-car garages are a necessity when you've got to store a car or pick-up, camper, snow-mobile, kids' sleds and bikes, skis, snowshoes, etc. etc.

With an annual snowfall of 14 inches (with white stuff on the ground seven months a year) Churchill Falls has few rivals for winter sports but conditions like a nine-foot deep muskeg cover posed many problems when ground was broken in 968. The Churchill Falls project is a seven million horsepower hydro-electric plant. A smaller facility, [illegible] miles away at Twin Falls, is also crewed by men who live in Churchill Falls but commute to work daily by road.

It is the new model company town where rents and consumer goods in the several stores are subsidized by Brinco to thaw the cost of living.

Max Tomlinson, construction manager for Churchill Falls Corp. who built the town from the ground up, told delegates the community was conceived and executed to cater to the needs of the families who now operate the development. He showed color slides of the 12 apartment buildings, 60 houses, school, hospital, futurisitic directors' lodge and 200 house trailers clustered about the central services core. An attractive multi-denominational church was also built. Tomlinson commented the church was "working out very well".

There you have it. The company provides bread in its supermarket, wine (or beer, at least) in the hotel's two lounges, religion, radio-TV (thanks to the micro-wave reception facilities of Bell Canada); even a place for Churchill Falls' blue-jean brigade to "hang out" in the shopping-mall atmosphere of the Donald Gordon Center. (One wonders if the sight of those laid-back teenagers rapidly approaching Consciousness 3 wouldn't be enough to turn the late CNR prexy in his honorable grave.)

And what about those Hollywood vanities? So far, they haven't been included in projected blueprints. Not applicable to Northern construction exigencies? That's what they said about humidifiers but a switch from forced-air to electric heating (it's a 200 amp all-electric community) showed a definite need for mechanical water vaporizers. If future homes at Churchill Falls get built-in humidifiers, can the self-illuminated make-up mirrors be far behind?

Optimum cosmetic research and maintenance could be a strong psychological plus factor where the nights are long. How about it?

BLUES REVISITED: WITH HELP FROM DON LIGHTFOOT AND ROBERT CHARLEBOIS

> Mon pays, ce n'est pas un pays
> C'est l'hiver.
> Gilles Vignealt.

In *Northern Realities*, Jim Lotz makes an unequivocal assertion: In the Canadian consciousness, there exists a vast, snow-covered landscape. This landscape is, first of all, a real part of our experience. Winter is a known annual event in our lives; no Canadian is a stranger to it. It conditions what we become and it reinforces what we are: a people of the North.

And yet, as we have all heard 3,000 times, we cheapen ourselves and deny the validity of our own culture by aping the lifestyle of a society which is not of our making, which does not share our goals, our manners, our politics, or, to make it quite clear, our winter. And most of us pretend that winter is a yearly endurance contest that inexplicably but inevitably separates us form our Miami Beach-motel-modern lives.

We now know that a new spirit of nationalism strides across the land. That we have begun to think of ourselves as a people, *pas comme les autres*. And that aforementioned landscape, white, lonely and windswept is becoming a new thing; one of the things that we turn to in order to find ourselves.

> I never saw a wild thing
> sorry for itself.
> D. H. Lawrence.

Finding ourselves is certainly going to involve taking into account the great sea- and land-mass "north of sixty". And it will mean accepting its existence as valid and important; not because of the fortunes to be made in natural resources and not because of the plight of the native peoples and not because its there to be conquered. But because it is part of us; because whatever happens in the north is a statement about, and an assessment of, its people. We *are* that people. And "we" are all the people in this land.

"Neat tautology", you may say. Or, "All very well, but completely unrealistic." O.K. But the arguments about the resources and the natives and the challenge are all getting a bit tired too. And they are not, never have been, satisfactory. There is something about the whole set-up that calls for a full, human and moral response. There is no reason to find that embarrassing.

> Like a bird on a wire,
> Like a drunk, in a midnight choir,
> I have tried, in my way,
> To be free.
> Leonard Cohen.

And what has all this sentimental claptrap got to do with building in northern communities? And just why is this space being used to go on about it instead of being used to recap the plenary pyrotechnics of Fryer, Schaeffer, Tobiasson and Crittenden (for which it was, with apologies to those worthy gentlemen, reserved)?

Fair enough. What is emerging from this conference, at this point, is the repeated emphasis that the "problems", any of the problems are specific rather than general. There is nothing one can say about northern communities in a general way except that they tend to be cold. And even that is open to question...

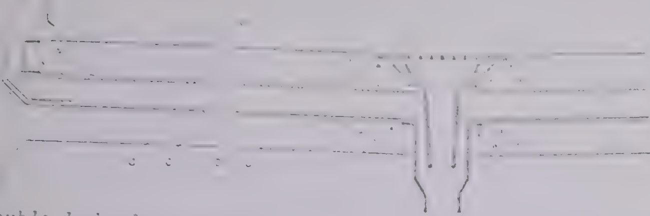
A building in Inuvik is not a new town in Fermont. Permafrost, as we have (perhaps painfully) learned, is not only and always permafrost. Technological adequacy does not equal human happiness. Although, one cannot be divorced from the other. What it is, is complicated and difficult. Let no one be deterred by that.

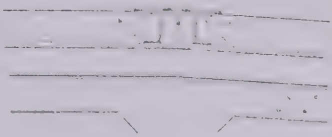
We will have to begin to take life in the north every bit as seriously as we take life in Montreal. In fact, human experience in the north is going to ultimately teach us as good deal about *how* to live in Montreal. Which won't hurt a bit.

One does not wish to, nor intend to, devalue the help we have had, in and out of this Conference, and the mutually pleasurable relations we hope to have with our neighbour nations. Having a neighbour is being a neighbour. Is being.

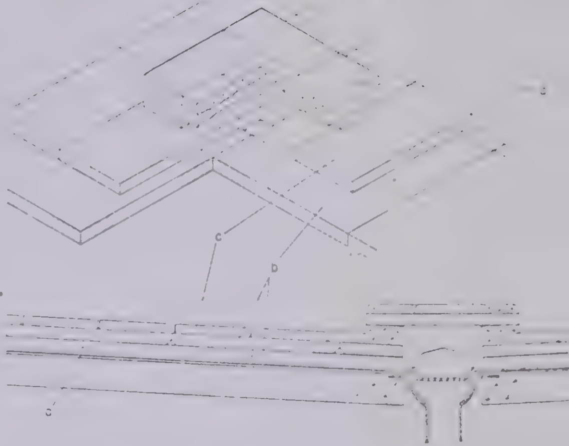
NEWS FLASH: LUNCH WITH ERSKINE - TODAY!

DEVELOPMENTS IN FLAT ROOFS FOR COLD CLIMATES





Double-drained and vented roof with only one membrane. The floating concrete slabs are not waterproofed have positive slope. The membrane taken the place of the vapor barrier d ensures complete waterproof protection. Structural deck; b) Vapor barrier, built as water- proof membrane; sulation; d) Shear layer of sand and paper; e) Floating slab; f) Joint cover.



Protected membrane roof with concrete pavers. The cover over the drain permits free entry of water flowing on the roof surface and protects the drain from freezing. Some water penetrates between joints in the insulation and collects to flow on the membrane. Water cannot stand and freeze on the surface. Moisture is driven out of the roof by the heat from below (temperature gradient). The surface is not sealed. This figure shows how the water can flow on the pavers into the drain through opening in the cover. a) Membrane, b) Insulation (boards), c) Ballast (pavers), d) Drain cover.

A close comparison of the protected membrane roof (see illustration) with the double-drained roof shows that the roofs are distinctly similar despite the difference in the developments leading to their design. They both separate the functions of protection from the forces of weather and traffic and of resistance to water penetration. The protected membrane roof does not attempt to seal the top surface; the double-drained roof eliminates the need for a sealed top surface.

Both roofs have two important features that make them uniquely suited to construction in cold climates, and attractive for construction in moderate climates where there is a short winter season:

(1) The structural deck is insulated. Its temperature remains nearly constant throughout the year. Thermal movement of the deck is greatly reduced, resulting in some design simplifications and probably reduced deterioration of the structure.

(2) Construction is les dependent on favourable weather conditions. There is no danger of building moisture into the roof because the roof is designed to handle any and all moisture. It is continuously self-drying upwards and downwards. Even the membrane can be installed during inclement weather.

These drawings and the accompanying information are supplied to us, and you, through the courtesy of H.W.C. Aamot.

CONFERENCE GOES TO DINNER: WHIRLWIND TOUR OF TERRE DES HOMMES

A bus leaving the conference area at 6 p.m. sharp will whisk conference participants to St. Helen's Island on Thursday evening.

The group will be met by trains from "La Ballade" and will be given a short, private tour of the Expo site. Following the tour, participants will have dinner in the elegant Hélène de Champlain Restaurant operated by the City of Montreal.

And speaking of that whirlwind: it's chilly over there, so bring your coat!

VIVE [illegible] FLAG-

[illegible]

THE CONFERENCE/WORKSHOP ON BUILDING IN NORTHERN COMMUNITIES

HOW TO GET IT UP:
HOLDEN LAYS IT DOWN

"There are a lot of charlatans in this business. We make allowances for that". Its all part of the normal operation of the University of Alaska's Planning Office according to Richard Holden who addressed the Conference Thursday morning.

Twenty percent of all capital expenditure in the state of Alaska goes to the University which is charged with providing all higher education services in the state. Facilities must be provided over a very wide land area for a population whose make-up and social dynamic may change unpredictably. What seems certain is that the student growth rate is 8%; the population of Anchorage is expected to double in the next decade.

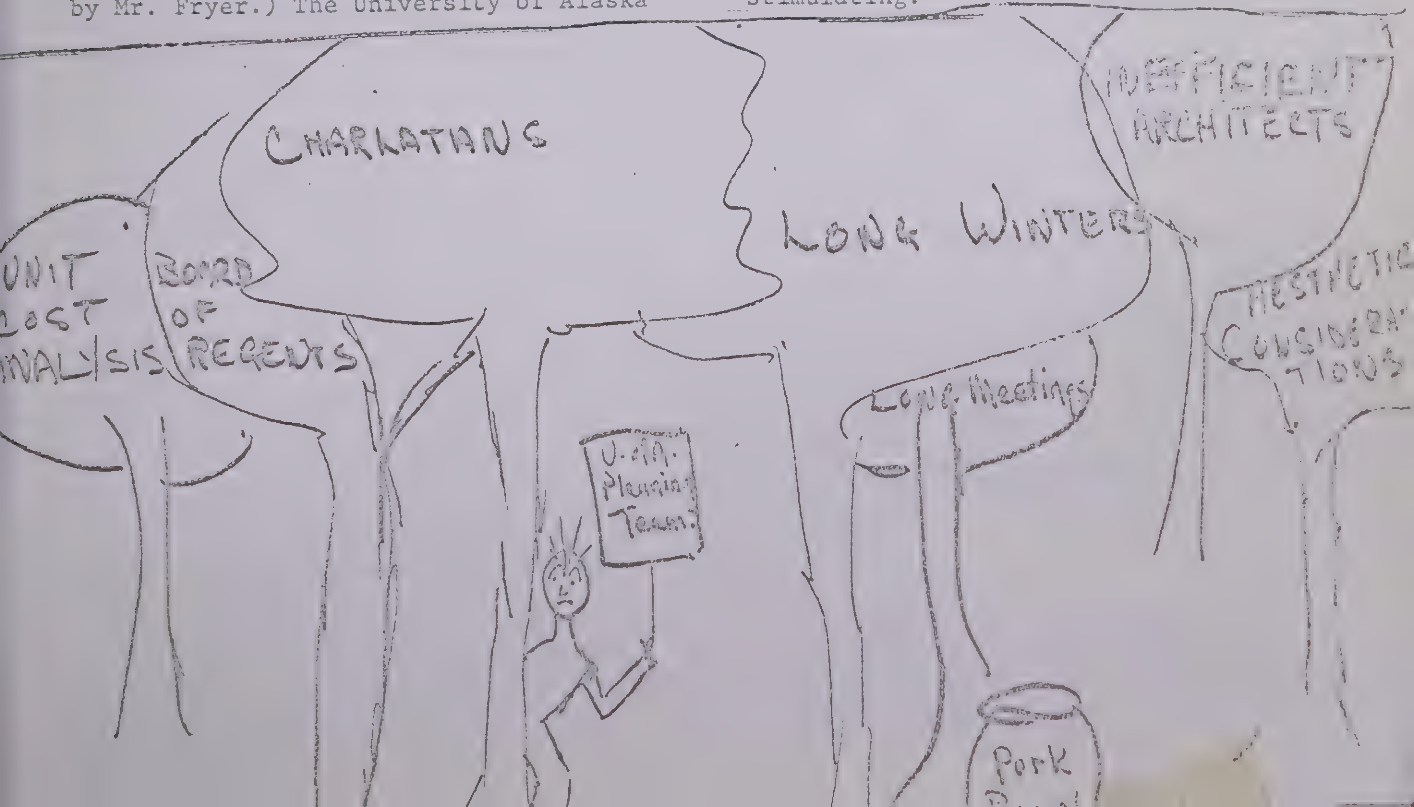
The Planning Office has had to take into consideration these imponderables as well as the "normal" difficulties of building in the north. What they have done is develop a streamlined form of scheduling. (Participants will remember the emphasis that Mr. Jacobsen placed on the economic orientation of design and engineering; as well as the priority position given to schedule by Mr. Fryer.) The University of Alaska has taken an innovative approach to its building program which takes careful account of the need for efficacious and speedy scheduling as well as its bureaucratic-economic realities.

This has resulted in the acquisition of the following key advantages:

1) Long term flexibility within defined program and cost limits;
2) Guarantee of performance by component sub-systems bidded;
3)Accurate prediction of building costs resulting in tight budget control;
4) Shortening of the time required for design and construction: and,
5) Potential for costsaving by aggregating the bids for component sub-systems for several projects at one time.

At the same time, the programming of the planning office allows and compensates for the areas of reduced competence and accuracy in the specialized areas of architecture and construction. Computerized data systems on historical applications have resulted in the development of a unit price system which preconditions cost range.

The approach has been imaginative and unconventional but, at the same time, firmly based on practical considerations. Mr. Holden's presentation was delightfully frank and extremely stimulating.



"ICE CITY"

In a presentation delivered to the Conference on Thursday afternoon, Mr. V. Hartkopf suggested that many problems in northern community design were caused by importing a southern technology into the north. He suggested that a more revolutionary thought would be to import processes into the specialized northern environment which the indiginous inhabitants can manipulate to their own ends and satisfaction.

There must be substantially more input into design originating from the northern consumer, and, if possible, a greater opportunity for man to adapt the technology presented to him. For these reasons, design should incorporate flexible alternatives.

"Ice City" was a work shop concept which attempted to test immediate applications of natural processes for emergency shelters as well as analagous building materials only to illustrate the "dynamic existence of material". The weathermen played dirty pool, however, and the 60 degree temperatures, resulting in the renaming of the conference as "Slush City", meant that many of the interesting ideas simply melted away.

We can only wish Hartkopf et al. good luck with "Ice City - Mark II" which may be held in Texas, - where the temperatures seem (at least lately) to be colder than in North Dakota.

THE ALERT PROJECT, OR, GEE, WHAT A FUNNY LOOKING ANTENNA......?

Alert is without question the most isolated community in Canada, located at the northern tip of Ellesmere Island. But, it is also one of the most specialized because it is a Canadian Forces station.

Mr. J. K. Komocki explained to the Conference that the major problem is a human one: an all-male population coping with isolation under terrible environmental conditions. So extreme, in fact, that everyone has to check in and check out whenever they leave the building.

Communication with the outside world is all by aircraft, the largest being the C-130. Thus all building components, fuel, etc. must be designed to fit into the aircraft.

Everything except palm trees is being incorporated into the design, - swimming pools, saunas, shooting ranges, theatres, - you name it. But, no girls.

Several new ideas are being considered too, especially gentle approaches to the visual and natural environment. Waste water will be recycled, all garbage will be reduced to ash and whatever is left will be shipped south.

Mr. Komocki was not able to show any slides of the site, but he did say that the results of the various consultants' studies of the project would eventually be made public. We hope so, - the list of specialists involved was truly impressive.

GRAINGE'S TOUR ESTIMATED BETTER THAN COOK'S

This has been a pretty hard-working conference. Down to the nitty-gritty, the low-down on the low down and a hell of a lot of brass tacks. Comic relief has rarely been such a relief as it was when Mr. Grainge took the podium on Thursday.

Mr. Grainge was joking. Sometimes. But he wasn't kidding ever. He showed us a collection of slides which made a point out of the "human values" that we have all been liberally espousing this week. In the centre of his diffident charm was an unfailing eye for the human and the immediate and the lovely.

The point was well taken. Mr. Grainge made human response the focal point of his presentation. And no one there had any doubts about it.

***********CLASSIFIED***************

Tom Wellems and Glenn Krauth would like to thank all who had part in organizing and serving this excellent conference for the outstanding hospitality. Montreal has been most enjoyable. If you get to Albuquerque, we would be happy to see you and try to reciprocate.

***********CLASSIFIED***************

THE ARCTIC INSTITUTE OF NORTH AMERICA IS THE BETTER, BIGGER AND BRIGHTER FOR HAVING KNOWN YOU. OUR CONGRATULATIONS AND OUR GRATEFUL THANKS.

ESKIMOS ARE NOMANDS. TODAY'S ARCTIC SETTLERS WITH SNOWMOBILES. THE WHITE MAN BUGGERED THEM UP: THOSE GOVERNMENT MAKE-WORK JOBS: LABOR-INTENSIVE STUFF LIKE CLEARING THE LAND. IT MAKES THEM WANT TO LIVE OFF WELFARE RATHER THAN TAKING A JOB WITH AN OIL COMPANY.

Racism now represents the greatest obstacle to the advancement of native peoples in the north and throughout the world. It is the arch-enemy of science. It is a poison that first sickens, then kills.

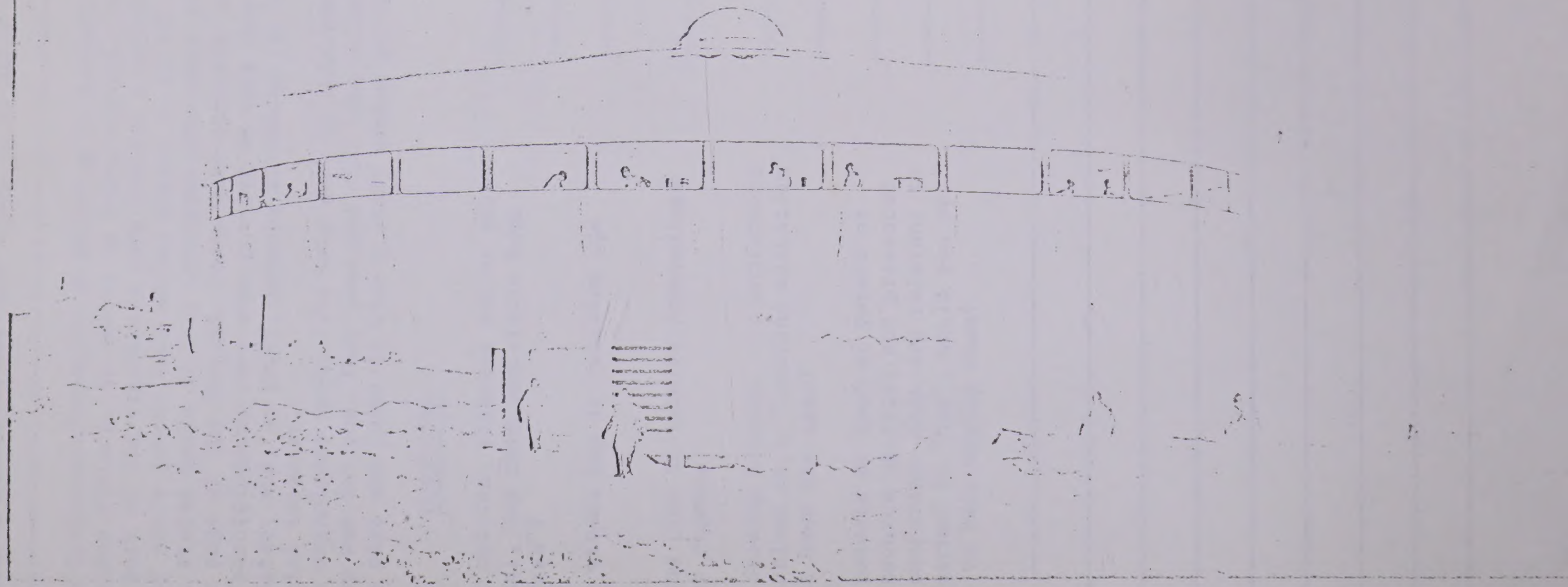
The heat required to thaw a pan of snow for washing would be sufficient to melt an igloo.

They used bath-tubs as toilets and thought toilets were water wells.

They are not being taught how our society works. They don't know where the money comes from.

Dick and Jane stories are of no interest to Eskimo children. Skin disease is a hygiene problem.

Many responsible Indian and Eskimo leaders have refused to allow alcohol in their communities and one, at the top of Baffin Island refused to allow the white mine-owners to build a road from the lead mine into the Eskimo settlement. His people are still proud hunters.



WE HAVE TO ACCEPT RESPONSIBILITY FOR ANY SYSTEM WE INTRODUCE. IF WE TAKE AWAY SOMEBODY'S IGLOO OR THEIR FAMILY SHACK, WE HAVE TO BE RESPONSIBLE FOR SEEING TO IT THAT THEY KNOW HOW TO LIVE WITH WHATEVER WE'VE GIVEN THEM. THE USER IS THE STIMULUS AND THE ENVIRONMENT MUST RESPOND. (30)

Date Due

JAN 26 '81

38265

Pam:69:(*41N)
CWBNC

AUTHOR Conference/Workshop on Building in Northern Communities, Montreal, May 7-11, 1973. Newsletter.
TITLE

DATE

University of Alberta Library
0 1620 0337 2487